Bay Area Air Quality Management District

375 Beale Street
San Francisco, CA 94105

Refinery Rules
Proposed Rule Amendments to:

Rule 6-5: Particulate Emissions from Refinery Fluidized Catalytic Cracking Units

Rule 11-10: Hexavalent Chromium Emissions from All Cooling Towers and Total Hydrocarbon Emissions from Petroleum Refinery Cooling Towers

Rule 12-15: Petroleum Refining Emissions Tracking

STAFF REPORT
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The following people participated in the Air District workgroup to develop the proposed amendments to this rule. Each deserves recognition for their important contributions.

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I. INTRODUCTION AND SUMMARY

The Bay Area Air Quality Management District (Air District) is proposing amendments to two of three rules that were adopted by the Air District Board of Directors on December 16, 2015. These rules were challenged by three of the five Bay Area refineries in a lawsuit that was filed on January 22, 2016, *Valero, et al. v. Bay Area Air Quality Management District*, case number N16-0095, and amended on February 16, 2016. On March 24, 2017 the parties to the lawsuit entered an enforcement agreement and agreement to stay litigation for all three of these regulations (referred to in this Report as the "Valero Case Agreement"). Terms of the Agreement affect implementation of Regulation 6, Rule 5: Particulate Emissions from Refinery Fluidized Catalytic Cracking Units (Rule 6-5); Regulation 8, Rule 18: Equipment Leaks (Rule 8-18); and Regulation 11, Rule 10: Hexavalent Chromium Emissions from All Cooling Towers and Total Hydrocarbon Emissions from Petroleum Refinery Cooling Towers (Rule 11-10). This Report will sometimes use the phrase "2016 Refinery Rules" when referring to these three rules collectively. Specifically, the Air District staff committed in the Agreement to implement the three rules that were challenged for a limited period of time in a manner consistent with how the rules are being proposed to change. The intent of this provision is that the refineries should not have to implement in the near-term provisions that are different than those contemplated in the Agreement. If the rules are not changed as contemplated in the Valero Case Agreement, the refineries will have to implement the rules as originally adopted in 2016. In that scenario, the refineries could reactivate their lawsuit and move forward with their legal challenge to the rules.

The Agreement states the Air District will propose amendments to the 2016 Refinery Rules for adoption by the Air District Board of Directors by November 1, 2018. This Staff Report describes the draft amendments to Rule 6-5 and to Rule 11-10 and provides the background information and rationale for the proposed amendments. Draft amendments to Rule 8-18 are not being presented at this time and will be delayed until a Refinery Heavy Liquids Fugitive Leaks study can be completed at all five Bay Area refineries. This study is underway, and findings are expected to be finalized in late 2018. Information from the study will be used to determine appropriate amendments for Rule 8-18, expected in Spring 2019.

In addition, the Air District is proposing amendments to Regulation 12, Rule 15: Petroleum Refining Emissions Tracking (Rule 12-15), adopted by the Air District Board of Directors on April 20, 2016. Rule 12-15 was challenged in a lawsuit that was filed by the Western States Petroleum Association ("WSPA") and three of the refineries on May 25, 2016, *WSPA, et al. v. Bay Area Air Quality Management District*, case number N16-0963. Like the Valero Case Agreement, parties to the lawsuit have entered an agreement to stay the WSPA case litigation contingent on the Air District proposing specified amendments to Rule 12-15 (but not Rule 9-14). This agreement, entered into as of March 1, 2018, will be referred to in this Report as the "WSPA Case Agreement." Similar to the Valero Case Agreement, in the WSPA Case Agreement the Air District committed to implement Rule 12-15 for a limited period of time in a manner consistent with how Rule 12-15 is being proposed as contemplated in the Agreement. The intent of this provision is that the refineries should not have to implement in the near-term provisions that are different than those contemplated in the Agreement. If Rule 12-15 is not changed as contemplated in the Agreement, the refineries will have to implement Rule 12-15 as originally adopted. In that

scenario, the refineries could reactivate their lawsuit and move forward with their legal challenge to Rule 12-15. This staff report describes the proposed amendments to Rule 12-15 and provides the background information and rationale for the proposal.

The proposed amendments to Rule 6-5 include revisions to:

- Clarify exemptions and rule provisions.

The proposed amendments to Rule 11-10 include revisions to:

- Modify and clarify limited exemptions for smaller cooling towers;
- Clarify a limited exemption for cooling towers not in petroleum refining service;
- Modify and clarify leak monitoring, action, and reporting requirements; and
- Remove Best Modern Practices requirements and associated reporting requirements.

The proposed amendments to Rule 12-15 include revisions to:

- Modify and clarify rule definitions and applicability;
- Clarify the annual Emissions Inventory review and approval process;
- Modify and clarify fence-line monitoring plan requirements, and review and approval process;
- Modify the process for updating Emissions Inventory Guidelines and Air Monitoring Guidelines;
- Modify the monthly crude slate report requirements; and
- Modify provisions for designating confidential information.

The Air District is publishing the full mark-up text of proposed amendments for Rule 6-5, Rule 11-10, and Rule 12-15 along with this Staff Report.

The proposed amendments to Rule 6-5 would apply to the four Bay Area refineries with fluidized catalytic cracking units. The proposed amendments to Rule 11-10 and Rule 12-15 would apply to all five Bay Area refineries.

Proposed amendments to Rule 6-5 would have no impact on emissions, as the amendments are clarifications of the original intent of Rule 6-5. Similarly, proposed amendments to Rule 12-15 have no impact on emissions. Rule 12-15 is an emissions reporting rule, therefore affect only emissions reporting and no controls are required.

Cooling tower hydrocarbon emission estimates are shown in Appendix 4. Baseline emissions are prior to December 2015. Rule 11-10, as adopted in December 2015, was never implemented. Instead, Rule 11-10 has been implemented under the terms of the Valero Case Agreement. Proposed amendments to Rule 11-10 have been developed to formalize the terms of the Valero Case Agreement. It should be noted, however, that the proposed amendments could theoretically impact emissions relative to the rule, as adopted. This possible difference is due to reduced frequency in monitoring and thus potential delay in identifying and repairing a leak. As shown in Appendix 4, staff estimates that foregone emissions reductions could be between 1 to 16 tons of hydrocarbons per year from monitoring weekly rather than daily. These potential emission impacts are described in Section VI. Emission Reductions & Compliance Costs. Furthermore, a Draft Environmental Impact Report (DEIR) will be developed to analyze the potential environmental impacts. In addition, refinery fence-line monitoring (required under Rule

12-15) will be in place to detect and minimize any impacts of significant hydrocarbon leaks.

No costs would be incurred from any of the proposed amendments to these three rules. The proposed amendments to Rule 11-10 will result in cost savings from reduced frequency of cooling water monitoring.

This Staff Report describes the proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15. Following this introduction and summary, Section II, Background; Section III, Regulatory Framework; and Section IV, Technical Review each reference the relevant material available in the original Staff Reports for each rule development project in 2015 and 2016. These previous Staff Reports are attached to this staff report as Attachments 1, 2, and 3. Section V, Proposed Rule Amendments comprehensively discusses each of the proposed rule amendments. Section VI, Emission Reductions & Compliance Costs discusses of the expected air quality impacts and compliance costs. Section VII, Rule Development and Public Consultation Process outlines the public outreach and involvement process that the Air District takes in developing the proposed amendments and provides further information on how interested members of the public can get involved.

In the process of negotiating the Valero Case Agreement and the WSPA Case Agreement, the Air District agreed to propose changes it believed were justified as a matter of policy. Notwithstanding the commitment made in these agreements to propose certain specified rule changes, the Air District is still at this point able to decide which of these changes should be adopted. Public input will be considered in making this decision. As noted above, the Valero and WSPA case agreements give the refineries the right to reactivate their lawsuits if rule changes consistent with those specified in the agreements are not adopted. Notwithstanding these legal consequences, the Air District's intent in seeking comment on these proposed amendments is to follow through with adoption after considering all comments received.

The Air District invites all interested members of the public to review and comment on the proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15 along with this Staff Report. In addition, the Air District invites all interested members of the public to review and comment on the Draft Environmental Impact Report (DEIR). Air District staff will present a final proposal to the Air District's Board of Directors for consideration. For further information in advance of the Public Hearing, please contact Guy Gimlen, Principal Air Quality Engineer, at (415) 749-4734, or ggimlen@baaqmd.gov.

II. BACKGROUND

Background information for each of the rule development projects for Rule 6-5, Rule 11-10, and Rule 12-15 are available in the Background sections of each staff report, attached as Attachment 1 (Rule 6-5 Staff Report), Attachment 2 (Rule 11-10 Staff Report), and Attachment 3 (Rule 12-15 Staff Report).

III. REGULATORY FRAMEWORK

Information on the regulatory context and framework pertinent to sources and facilities subject to Rule 6-5, Rule 11-10, and Rule 12-15 can be found in the attached staff reports

for these rules.

IV. TECHNICAL REVIEW

Technical information on the facilities, sources, and emissions subject to Rule 6-5, Rule 11-10, and Rule 12-15 can be found in the attached staff reports for these rules.

V. PROPOSED RULE AMENDMENTS

This section discusses the proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15 in detail.

A. Proposed Amendments to Rule 6-5

The proposed amendments to Rule 6-5 include revisions to provide more clarity and conciseness to portions of the Rule, as described below.

Clarification of Rule Provisions

Section 6-5-111: Exemption, Emissions Abated by Wet Scrubber: This exemption is clarified by stating more clearly that the requirements of the rule do not apply to sources abated with a wet scrubber that constitutes best available control technology (BACT). Because a wet scrubber is the most stringent control available for controlling particulate from a fluidized catalytic cracking unit, this rule would have no potential impact on a refinery using a wet scrubber. The change in rule language is consistent with the intent of the rule as adopted and does not represent a substantive change.

Section 6-5-301: Fluidized Catalytic Cracking Unit (FCCU) Emission Limits: This section is made more succinct by deleting placeholders for future limits on condensable particulate matter and sulfur dioxide (SO_2). Limits on these emissions may be developed at a future date, but are not being proposed now. This is not a substantive change. The placeholder limits are informational only, and were included in the rule to alert readers to the intended two-part nature of Rule 6-5, in which the 2015 rule adoption, focusing on ammonia injection optimization, was to be followed by examination and possible adoption of further control measures. The Air District believes that interested parties are sufficiently aware of the two-part plan that the placeholder is no longer needed to serve the informational purpose for which it was intended, and can be deleted from the rule. Deleting the placeholders will have no effect on the Air District's authority to adopt further measures to control particulate from refinery FCCUs.

B. Proposed Amendments to Rule 11-10

The proposed amendments to Rule 11-10 include revisions to modify limited exemption requirements; modify and clarify leak monitoring, action, and reporting requirements; and remove modern practice requirements and reporting, as described below.

Limited Exemptions for Smaller Cooling Towers

Section 11-10-105: Limited Exemption, Recirculation Rates Less Than 500 Gallons Per Minute: This limited exemption is amended to require cooling towers with a water recirculation rate of less than 500 gpm to be monitored once every week (rather than every 14 days). The proposed amendments also allow operators to elect to move to a monthly

monitoring schedule if monitoring results at the cooling tower are below the Leak Action Level for four consecutive weeks. If the Leak Action Level is exceeded, the operator must revert to the weekly monitoring schedule, but may be eligible to again move to the monthly monitoring schedule after demonstrating four consecutive weeks below the Leak Action Level.

Section 11-10-106: Limited Exemption, Recirculation Rates Less Than 2,500 Gallons Per Minute: This limited exemption is amended to require cooling towers with a water recirculation rate of less than 2,500 gpm to be monitored once every week (rather than every seven days). The amendments also allow operators to elect to move to a monthly monitoring schedule if monitoring results at the cooling tower are below the Leak Action Level for four consecutive weeks. If the Leak Action Level is exceeded, the operator must revert to the weekly monitoring schedule, but may be eligible to again move to the monthly monitoring schedule after demonstrating four consecutive weeks below the Leak Action Level.

The proposed amendments to Sections 11-10-105 and 11-10-106 standardize the monitoring requirements for cooling towers under these limited exemptions, providing identical requirements for all cooling towers with water recirculation rates in both of these size ranges. The amended weekly monitoring schedule is more frequent than the existing rule requirement for cooling towers with rates less than 500 gpm (once every 14 days) and is of similar frequency to the existing requirement for cooling towers with rates less than 2,500 gpm (once every seven days). The Air District believes the provision under both sections to allow operators to move to monthly sampling is a more rational approach that tailors monitoring frequency to be more or less intensive depending on the past monitoring results. This will reduce monitoring burden for well-performing units while maintain a stricter monitoring regime for units with heat exchangers showing a tendency to leak.

Limited Exemption for Cooling Towers Not in Petroleum Refining Service

Section 11-10-107: Limited Exemption, Cooling Towers Servicing Hydrogen Production, Carbon Dioxide Recovery and Power Generation Facilities: This exemption is amended to clarify that cooling towers that are not in petroleum refining services are exempt from the total hydrocarbon requirements of this rule. Specific examples of cooling towers not in petroleum refining service are cited. Provisions are made to clarify that cooling towers serving refinery sulfur plants, lube oil streams, and amine streams will be evaluated on a case-by-case basis to determine if the cooling tower is subject to the total hydrocarbon requirements of the Rule. This is a clarification of original intent and not a substantive change.

Leak Monitoring, Action, and Reporting Requirements

Section 11-10-304: Total Hydrocarbon Leak Monitoring Requirement: Subsection 304.1 is amended to require cooling towers to be sampled once every week (rather than once every day). The proposed amendments also allow operators to elect to move to a twice-monthly (two samples per month) sampling schedule if sampling results at the cooling tower are below the Leak Action Level for six consecutive months (26 consecutive weekly samples). If the Leak Action Level is exceeded, the operator must revert to the weekly sampling schedule, but may be eligible to again move to the twice-monthly sampling

schedule after demonstrating six consecutive months below the Leak Action Level. Section 11-10-304.3 is also amended to require operators using an alternative Air District approved monitoring method to follow these same monitoring frequency requirements described in Section 11-10-304.1.

The amended weekly monitoring schedule is less frequent than the existing requirement (once every day) and is identical to the weekly frequency required of smaller cooling towers under the amended Sections 11-10-105 and 11-10-106. After further examination and consultation with the refineries following adoption of Rule 11-10, the Air District concluded that daily monitoring is more burdensome than necessary. Cooling tower leaks have the potential to emit a large amount of emissions, but they are a rare occurrence. The Air District believes weekly rather than daily monitoring better balances the burden of monitoring with the potential for excess emissions and is still a substantial improvement over pre-existing practices. The provision to allow operators to move to twice-monthly sampling is a more rational approach that tailors monitoring frequency to be more or less intensive depending on the past monitoring results. Again, this will reduce monitoring burden for well-performing units while maintain a stricter monitoring regime for units with heat exchangers showing a tendency to leak.

The proposed amendments to monitoring frequency may potentially delay the detection of a leak relative to Rule 11-10 as adopted. It is theoretically possible that this change in monitoring frequency would allow a cooling tower leak to go undetected for a few more days than would be allowed under the adopted version of the rule. Estimates of foregone leak emissions reductions from potential delays in detection shown in Appendix 4 may be speculative due to the variable nature of leaks; nevertheless, potential emissions scenarios are evaluated further in Section VI of this report. In addition, refinery fence-line monitoring will be in place to detect and help to minimize any impacts of significant hydrocarbon leaks.

Section 11-10-305: Leak Action Requirement: This section is amended to require cooling tower hydrocarbon leaks to be minimized as soon as practicable or within seven calendar days (rather than five calendar days) to provide time for necessary leak minimization delays associated with potential technical and/or safety constraints. The proposed amendment adds a provision that any delays in leak repair beyond 21 days must meet the criteria cited in 40 CFR 63.654(f)-(g) of the United States Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart CC for Petroleum Refineries and be approved by the Air District. This proposed amendment is intended to better align leak repair requirements with applicable NESHAP conditions and provide time to identify the source of the leak, and for repair delays associated with potential technical and/or safety constraints. These proposed amendments to provide additional time for leak identification, minimization and repair may potentially allow increased emissions from leaks relative to Rule 11-10 as adopted; however, the Rule still requires that remedial actions be taken as soon as practicable, and any foregone leak emissions reductions from potential delays in minimization and/or repair would be highly speculative and are not likely to be substantial.

The section is also amended to require operators to speciate and quantify toxic air contaminants (TACs) from water sampling within 72 hours of leak discovery (rather than within one calendar day of leak discovery) to provide adequate time and flexibility for

potential sampling and analysis constraints (e.g. analytical lab closed over a holiday weekend).

Section 11-10-401: Petroleum Refinery Cooling Tower Reporting Requirements: This proposed amendment clarifies that sampling of the cooling tower water must occur as soon as feasible, and no later than 24 hours from the discovery of the leak. This section is amended to require notification of the Air District of total hydrocarbon concentration and chlorine concentration within 72 hours (rather than one calendar day) of discovering the leak. The proposed amendment also removes the requirements to report lists of all heat exchangers served by the cooling tower, as well as the pH level and iron concentration of the cooling water, as this reporting is unlikely to provide additional substantive information regarding the hydrocarbon emissions from the cooling tower. Notification requirements are also being added for delays in repair that meet the criteria cited in 40 CFR 63.654(f)-(g), as referenced in amended Section 11-10-305.

Best Modern Practices Requirements and Reporting

Section 11-10-402: Best Modern Practices: This section is being deleted to avoid potential duplication and conflicts with process safety management requirements. These requirements were intended to backup hydrocarbon sampling, but facility monitoring of chlorine residual is a better backup method. In addition, maintaining these requirements in Rule 11-10 would require revisions to the rule as "best modern practices" changed, without any clear benefit since these best practices are largely drawn from other regulatory requirements such as those implemented by California Occupational Safety and Health Administration. Moreover, several practices listed relate to cooling tower water chemistry and do not relate directly to hydrocarbon emissions; practices relevant to hydrocarbon emission monitoring and leak minimization and repair are more appropriately addressed through the leak monitoring requirements, monitoring chlorine residual and leak action requirements contained in other sections of the Rule.

Section 11-10-504: Operating Records: This section is being amended to remove recordkeeping requirements associated with the deleted Section 11-10-402, as these recordkeeping requirements are no longer applicable.

C. Proposed Amendments to Rule 12-15

The proposed amendments to Rule 12-15 include revisions to modify and clarify definitions and rule applicability, emission calculation methodologies, emission inventory review and approval requirements and procedures, fence-line monitoring plan requirements, procedures for updating guidelines, crude slate reporting requirements, and confidential information designation procedures, as described below.

Rule Definitions and Applicability

Section 12-15-205: Crude Oil: This definition is being amended to provide clarity, and language is also being added to define Crude Oil Blends for the purposes of the Rule. This does not represent a change from the intent of adopted Rule 12-15.

Section 12-15-206: Emissions Inventory: The proposed amendment removes the requirement to include emissions from cargo carriers (ships and trains) in the emissions

inventory data; these cargo carriers are not under the control or authority of the refineries, and therefore the refineries are not able to validate or report cargo carrier emissions. The Air District will estimate cargo carrier emissions based on publicly-available information. Other proposed changes to this section are to clarify the original intent of the rule and do not represent substantive changes.

Section 12-15-209: Monthly Crude Slate Report: This definition is being amended to address concerns from the refineries regarding the burden of providing information on non-crude feedstocks. Non-crude feedstocks are introduced at refineries across a vast spectrum of uses and often in very small quantities. The refineries have asserted, and the Air District agrees, that there are rapidly diminishing returns in requiring the refineries to provide information on every non-crude feedstock introduced. The basic purpose of the Crude Slate Report is to investigate whether there is a relationship between varieties of processed crudes and emissions. The Air District's original intent in requiring information on non-crude feedstocks in Rule 12-15 was to address a situation in which these feedstocks are being used as a substitute for normal crude oil inputs for a substantial period of time. The proposed amendments implement this intent more effectively than the current rule by establishing a threshold below which non-crude feedstocks need not be addressed in the crude slate report.

The proposed amendments to Section 12-15-209 would establish threshold volumes for imported feedstocks with API Gravity greater than or equal to 15 degrees (°) and imported feedstocks with API Gravity less than 15° that are fed to a fluid catalytic cracking unit. For calendar months when imports exceed either of these threshold volumes, a summary report of API gravity and sulfur, iron, nickel, and vanadium content is required. Volumes of non-crude oil feedstocks below these levels are unlikely to have substantial impacts on emissions. The proposed amendments also contain a provision for the Air District to review the necessity for these reporting requirements for non-crude oil feedstock by March 1, 2023 based on information gathered. At that time, an affected refinery may also request that this non-crude oil feedstock reporting requirement for the facility be terminated based on the previous five years of reporting data. The Air District has sole discretion to grant or deny the request.

The proposed amendments would also define precautions and procedures for handling confidential data for inspection, audit, and review. The proposed amendments ensure that refinery crude slate and non-crude feedstock data are protected appropriately, remain on-site at the refinery and are prevented from inadvertent release. The Air District will audit the raw data and calculations summarizing the crude slate and non-crude feedstock data, but will take only summary information. The refineries have repeatedly asserted that keeping crude slate data confidential is essential to maintaining competitiveness in the industry. The Air District recognizes the plausibility of this assertion, and also notes that the Crude Slate Report is part of an investigative process focused farther "upstream" from actual emissions than is typical for an air regulatory program. Given these circumstances, the Air District believes it is appropriate to build added protections into the rule to prevent the release of confidential information.

Emission Factors and Calculation Methodology

Section 12-15-401: Annual Emissions Inventory: This section is being amended to clarify the calculation methodology to be used for calculating greenhouse gases using a "common pipe" method. The proposed amendment lists the steps required to properly account for GHG emissions using fuel gas from common refinery fuel gas systems.

Note that there is a stipulation in the WSPA Case Agreement to use emission factors for heavy liquid components, as provided in the California Air Pollution Control Officers Association (CAPCOA) California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities,[1] on an interim basis. This section of the rule language is not being amended to include these emission factors for refinery heavy liquid fugitive leaks because this information fits best in the Air District Refinery Emissions Inventory Guidelines. These emission factors are considered interim and will be used until the Air District has completed the Refinery Heavy Liquids Study[2] and has developed new Bay Area refinery emission factors for these components.

Annual Emissions Inventory Review and Approval Process

Section 12-15-402: Review and Approval of Annual Emissions Inventory: This section is being amended to clarify the process for communicating and issuing preliminary review determinations under Section 12-15-402.1. The proposed amendment also clarifies the notification process for Air District of the review period under Section 12-15-402.3 and sets a limit of 45 days for the extension of the review period.

Fence-line Monitoring Plan Requirements and Review Process

Section 12-15-403: Air Monitoring Plans: This section is being amended to clarify that site-specific air monitoring plans will be allowed to have implementation schedules and dates that are tailored to the specific plan. The proposed amendments reflect that each refinery faces a unique set of circumstances in implementing a fence-line monitoring system. The intent of this proposed amendment is to allow facilities adequate time to properly complete design, permitting, sourcing, installation, testing, and start-up of monitoring systems, and to account for potential delays that are beyond the refinery's control, provided that these timing considerations are explained and supported in the plan. This provision for a tailored implementation date will also be applicable to the updates of the site-specific plans that will be required after updated air monitoring guidelines are published by the Air District, as described in Section 12-15-406.

Section 12-15-404: Review and Approval of Air Monitoring Plans: This section is being amended to clarify the process for issuing preliminary review determinations under Section 12-15-404.1. The proposed amendment also clarifies notification process for extension of the Air District's review period under Section 12-15-404.4 and sets a limit of 45 days for the extension of the review period.

[1] Emission Factors from TABLE IV-3a: CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals, California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon leaks at Petroleum Facilities, CAPCOA, February 1999.

[2] The Air District is currently conducting a study of fugitive leaks from heavy liquid components at the Bay Area refineries.

Section 12-15-501: Fence-line Monitoring System: These proposed amendments clarify that the requirements of this section are effective once the fence-line monitoring system is installed and operational, replacing the existing effective date of one year after approval of the air monitoring plan. This reflects the proposed amendment in Section 12-15-403 to allow tailored implementation dates for each site-specific air monitoring plan.

Update of Emissions Inventory Guidelines and Air Monitoring Guidelines

Section 12-15-405: Emissions Inventory Guidelines: Proposed amendments to the guideline update process include a 60-day comment period for affected facilities to review and comment on changes to the Emissions Inventory Guidelines; and the Air District must respond to comments received. Affected facilities will be given at least 90 days to implement changes from the updated Emissions Inventory Guidelines in their respective annual emissions inventories. These proposed amendments are intended to provide affected facilities the opportunity to provide relevant feedback to proposed guideline changes and allow sufficient time for these changes to be promulgated.

Section 12-15-406: Air Monitoring Guidelines: Proposed amendments to the guideline update process include a 60-day comment period for affected facilities to review and comment on changes to the Air Monitoring Guidelines; and the Air District shall respond to comments received. This proposed amendment is intended to provide affected facilities the opportunity to provide relevant feedback to proposed guideline changes.

Monthly Crude Slate Report Requirements

Section 12-15-408: Availability of Monthly Crude Slate Reports: Section 12-15-408.1 is being amended to validate that the historical monthly crude slate data required for years 2013, 2014, 2015, and 2016 will be based on records maintained by the refinery in the normal course of business, as historical data collected during these previous years may or may not align with the frequency, method, or scope of the ongoing monthly crude slate reports required under amended Section 12-15-408.2. The proposed amendments to this provision also define precautions and procedures for handling confidential data for inspection, audit, and review. The proposed amendments ensure that refinery confidential data are protected appropriately, remain on-site at the refinery, and are prevented from inadvertent release.

Subsection 12-15-408.2 is being amended to modify the summarized information required in the monthly crude slate report. These proposed amendments are made in Table 1 of the Rule and include added references to amended Section 12-15-209 regarding non-crude oil feedstock reporting requirements, deletion of vapor pressure reporting requirements for non-crude oil feedstocks, and deletion of BTEX (benzene, toluene, ethylbenzene, and xylene) reporting requirements for crude oil and non-crude oil feedstocks. A large majority of non-crude oil feedstocks are heavy gas oils, which have very low vapor pressure. BTEX is not typically analyzed for each shipment during the normal course of business, so this information is generally not readily available. In addition, the concern about BTEX occurs primarily with light "oil-shale" and fracking based crudes where vapor pressure is adequate to flag any significant changes.

The proposed amendments to this subsection also define precautions and procedures for handling confidential data for inspection, audit, and review. The proposed amendments ensure that refinery confidential data is protected appropriately, remains on-site at the refinery and is prevented from inadvertent release.

Designation of Confidential Information

Section 12-15-407: Designation of Confidential Information: This section is amended to defer to the amended Sections 12-15-209 and 408 for requirements regarding designation of confidential information under those sections, as those amended sections discuss treatment of confidential information explicitly. The requirements for an owner/operator to provide a redacted version of the document are removed because they are not relevant to Rule 12-15. Crude slate reports are not required to be submitted to the Air District. Emissions inventories are by definition "emissions data" and so cannot be claimed as confidential. Fence-line monitoring plans have already been submitted and contained no claims of confidentiality. It is likely that any revisions to those plans will likewise contain no confidentiality claims.

VI. EMISSION REDUCTION BENEFITS & COMPLIANCE COSTS

This section of the Staff Report summarizes the emission impacts that would result from the proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15, and the costs involved with these amendments.

A. Amendments to Rule 6-5

The proposed amendments to Rule 6-5 will have no impact on emissions. The proposed amendments are clarifications of the original intent of Rule 6-5. There are no costs associated with the amendments to Rule 6-5.

B. Amendments to Rule 11-10

Rule 11-10 has been implemented under the terms of the Valero Case Agreement. Proposed amendments to Rule 11-10 have been developed to formalize how Rule 11-10 has been implemented. Baseline emissions, and emissions reductions from enhanced cooling tower monitoring are estimated as shown in Appendix 4.

The proposed amendments to Rule 11-10 would require weekly monitoring, with potential adjustments to twice-monthly monitoring (i.e. two samples per month). These proposed amendments are estimated to reduce ROG emissions to as low as 64 tpy, as described in Appendix 4. While less stringent than daily monitoring, weekly monitoring remains substantially more stringent than monthly monitoring. Changing monitoring frequency as proposed in amendments to Rule 11-10 would not result in an increase in actual emissions because the amendments are consistent with how the Rule has been implemented since adoption. However, the change in monitoring frequency, when compared to the rule language as adopted, can theoretically allow for an emissions impact since less frequent monitoring may allow a potential future leak to go undetected for a longer period of time. The Air District can, through its enforcement program, take additional samples at random to increase the frequency of monitoring at facilities. This would reduce the amount of time between rule required monitoring where there is no data at facilities and mitigate some of

the foregone emission reductions.

The Air District's position is that a theoretical impact of increased emissions relative to the rule language that was never implemented does not require analysis under CEQA. However, for the sake of transparency and thoroughness, the Air District is analyzing these theoretical impacts so that the public understands the difference between the rule as it was adopted (though not implemented) and the rule as proposed. Staff estimates the foregone emissions reductions that could theoretically occur when monitoring weekly rather than daily range from 1 tpy to 16 tpy, as shown in Appendix 4. A Draft Environmental Impact Report has been developed to further analyze the environmental impacts. CEQA Guidelines indicate that cumulative impacts of a Project shall be discussed when the Project's incremental effect is cumulatively considerable, as defined in CEQA Guidelines §15065(c). The cumulative air quality impacts of the proposed Project have been evaluated in the Draft EIR.

No costs are incurred from proposed amendments to Rule 11-10. Estimated cost savings from the proposed amendments to Rule 11-10 that reduce frequency of cooling water monitoring are based on sampling and analysis of cooling water samples weekly, rather than daily. Staff assumes no continuous monitors are installed. Table C:4c in the Rule 11-10 staff report summarizes total sampling and analysis costs at $2,187,350 per year. Staff estimates reducing sample frequency from daily to weekly, including times when sampling frequency may be extended to twice-monthly or monthly will reduce costs by $1,678,750 per year. Cost effectiveness of reducing sample frequency and analysis is $110,000 saved per ton of potentially foregone emission reductions. This savings indicates these amendments are reasonable, since $110,000 per ton is well outside the range of normal cost effectiveness determinations.

C. Amendments to Rule 12-15

The proposed amendments to Rule 12-15 would have no impact on emissions. Rule 12-15 is an emissions reporting rule, so no controls are required, and the amendments affect only emissions reporting. There are no costs associated with the amendments to Rule 12-15.

VII. REGULATORY IMPACTS

Regulatory impact information on the facilities, sources, and emissions subject to Rule 6-5, Rule 11-10, and Rule 12-15 can be found in the attached staff reports for these rules.

VIII. RULE DEVELOPMENT AND PUBLIC CONSULTATION PROCESS

A. Rule Development Process

Staff anticipates that proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15 will be considered together at a Public Hearing. The Draft Environmental Impact Report (DEIR) will consider the cumulative impact of these three rule amendments. The Socioeconomic Analysis completed for Rule 6-5 and Rule 11-10 at the time of their adoption, and the Socioeconomic Analysis completed for Rule 12-15 at the time of its adoption are attached to this staff report. Proposed amendments to Rule 6-5 and Rule 12-15 do not have any cost impacts. Proposed amendments to Rule 11-10 will result in cost savings. Since the cost impacts of these proposed amendments are no impacts or cost

savings, no additional analysis beyond what has already been reported is needed.

B. Public Outreach and Consultation

A Public Hearing is the next step in the rulemaking process. Air District staff posted the CEQA Notice of Preparation / Initial Study of environmental impacts on August 1, 2018. Air District staff conducted a CEQA Scoping Meeting on Monday, August 20, 2018 at the District office. Comments for the CEQA analysis were due by Friday, September 7, 2018. The CEQA Initial Study and comments are found in the Draft Environmental Impact Report, Appendix A.

Air District staff posted the proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15 and initial staff report on August 20, 2018 to solicit input and identify any potential issues and concerns. Comments for the draft amendments and initial staff report were due by Friday, September 21, 1018. The Air District used the public's input, along with further investigation and analysis by staff to develop the final proposed amendments, and present to the Air District's Board of Directors for their consideration.

C. Review of Potential Environmental Impacts Under CEQA

The Air District contracts with an independent consultant to conduct a California Environmental Quality Act (CEQA) analysis of potential environmental impacts from any rule making projects. A Notice of Preparation/Initial Study (NOP/IS) regarding the impact of these proposed rule amendments were posted August 1, 2018 for review and comment. The CEQA Scoping Meeting was conducted on Monday, August 20, 2018.

The DEIR was conducted for all three proposed amended rules as individual CEQA projects. The consultant made an initial assessment of any environmental impacts based on the proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15, as well as this Staff Report. The DEIR includes a cumulative impacts analysis addressing, among other things, these three rules. The cumulative impacts analysis will be updated when Rule 8-18 is proposed for revisions as anticipated in the second half of 2019.

The final proposals and staff report have been used to finalize the CEQA environmental analysis. The DEIR is included in the final proposal, and posted for public review and comment at least 45 days before the Public Hearing. At the Public Hearing, the Air District Board of Directors will consider the final proposal and public input before taking any action on the proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15.

D. Review of Potential Socio-Economic Impacts

The Air District contracts with an independent consultant to conduct a Socioeconomic Analysis of potential economic impacts from the proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15. The Socioeconomic Analysis completed for Rule 6-5 and Rule 11-10 at the time of their adoption, and the Socioeconomic Analysis completed for Rule 12-15 at the time of its adoption are attached to this workshop report. Proposed amendments to Rule 6-5 and Rule 12-15 do not have any cost impacts. Proposed amendments to Rule 11-10 will result in cost savings. Since the cost impacts of these proposed amendments are no impacts or cost savings, no additional analysis beyond what has already been reported is needed.

IX. CONCLUSION / RECOMMENDATIONS

Pursuant to the California Health and Safety Code section 40727, before adopting, amending, or repealing a rule the Board of Directors must make findings of necessity, authority, clarity, consistency, non-duplication and reference. This section addresses each of these findings.

A. Necessity

"'Necessity' means that a need exists for the regulation, or for its amendment or repeal, as demonstrated by the record of the rulemaking authority." H&SC section 40727(b)(1).

Proposed amendments to Regulation 6, Rule 5: Particulate Emissions from Refinery Fluidized Catalytic Cracking Units (Rule 6-5); Regulation 11, Rule 10: Hexavalent Chromium Emissions from All Cooling Towers and Total Hydrocarbon Emissions from Petroleum Refinery Cooling Towers (Rule 11-10), and Regulation 12, Rule 15: Petroleum Refining Emissions Tracking (Rule 12-15) are needed to improve the clarity and efficiency of these rules as explained above in this Staff Report.

B. Authority

"'Authority' means that a provision of law or of a state or federal regulation permits or requires the regional agency to adopt, amend, or repeal the regulation. H&SC Section 40727(b)(2)."

The Air District has the authority to adopt amendments to these rules under Sections 40000, 40001, 40702, and 40725 through 40728.5 of the California Health and Safety Code.

C. Clarity

"'Clarity' means that the regulation is written or displayed so that its meaning can be easily understood by the persons directly affected by it." H&SC Section 40727(b)(3)

Proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15 are written so that their meaning can be easily understood by the persons directly affected by them. Further details in the staff report clarify the proposals, affected emission sources, compliance options, and administrative requirements for the industries subject to this rule.

D. Consistency

"'Consistency' means that the regulation is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations." H&SC Section 40727(b)(4)

The proposed amendments to the existing rule are consistent with other Air District rules, and not in conflict with state or federal law.

E. Non-Duplication

"'Nonduplication' means that a regulation does not impose the same requirements as an existing state or federal regulation unless a district finds that the requirements are necessary or proper to execute the powers and duties granted to, and imposed upon, a district." H&SC Section 40727(b)(5)

Proposed amendments to Rule 6-5, Rule 11-10, and Rule 12-15 are non-duplicative of other statutes, rules or regulations. To the extent duplication exists, such duplication is appropriate for execution of powers and duties granted to and imposed upon the Air District.

F. Reference

"'Reference' means the statute, court decision, or other provision of law that the district implements, interprets, or makes specific by adopting, amending, or repealing a regulation." H&SC Section 40727(b)(6)

Implementing, interpreting or making specific the provisions of the California Health and Safety Code Sections 40000, 40001, 40702 and 40727.

The proposed rules have met all legal noticing requirements, have been discussed with the regulated community and other interested parties, and reflect consideration of the input and comments of many affected and interested stakeholders.

G. Recommendations

Air District staff recommends adoption of proposed amendments Rule 6-5, Rule 11-10, and Rule 12-15 and adoption of the CEQA Draft Environmental Impact Report.

IX. REFERENCES

1. California Air Pollution Control Officers Association (CAPCOA), 1999. California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon leaks at Petroleum Facilities, February.

Appendices

1. California Environmental Quality Act – Notice of Preparation / Initial Study.
2. Valero Case Agreement: ENFORCEMENT AGREEMENT AND AGREEMENT TO STAY LITIGATION, March 24, 2017, re
    a. *Valero, et al. v. Bay Area Air Quality Management District*, case number N16-0095, January 22, 2016, amended on February 16, 2016.
3. WSPA Case Agreement: SETTLEMENT, ENFORCEMENT, AND RELEASE AGREEMENT, effective March 1, 2018, re

a. *WSPA, et al. v. Bay Area Air Quality Management District*, case number N16-0963, May 25, 2016.

4. Cooling Tower Hydrocarbon Emissions Estimates

Attachments

1. Regulation 6 Particulate Matter, Rule 5: Particulate Emissions from Refinery Fluidized Catalytic Cracking Units, December 10, 2015
2. Regulation 6 Particulate Matter, Rule 5: Particulate Emissions from Refinery Fluidized Catalytic Cracking Units Socioeconomic Analysis, December 10, 2015
3. Regulation 11 Hazardous Pollutants, Rule 10: Hexavalent Chromium Emissions from all Cooling Towers and Total Hydrocarbon Emissions from Petroleum Refinery Cooling Towers, December 10, 2015
4. Regulation 11 Hazardous Pollutants, Rule 10: Hexavalent Chromium Emissions from all Cooling Towers and Total Hydrocarbon Emissions from Petroleum Refinery Cooling Towers Socioeconomic Analysis, December 10, 2015
5. Regulation 12 Miscellaneous Standards of Performance, Rule 15: Petroleum Refining Emissions Tracking, April 20, 2016
6. Regulation 12 Miscellaneous Standards of Performance, Rule 15: Petroleum Refining Emissions Tracking Socioeconomic Analysis, April 20, 2016